CLAIMS:

1. A method of forming an opening in an insulative layer formed over a substrate in a semiconductor device, comprising etching said insulative layer with ammonia and at least one fluorocarbon so as to form said opening.

2. The method of claim 1, wherein said method is performed to produce a self-aligned contact opening.

3. The method of claim 1, wherein said etching includes plasma etching.

4. The method of claim 3, wherein said etching is performed within a temperature range of about -50 to about 80 degrees Celsius.

5. The method of claim 4, wherein said etching is performed within a temperature range of about 0 to about 50 degrees Celsius.

6. The method of claim 4, wherein said contacting is performed at an operating pressure of about 25 to about 60 milliTorrs.

7. The method of claim 4, wherein said contacting is performed at an operating pressure of about 40 to about 50 milliTorrs.

8. The method of claim 1, wherein said contacting is performed through a patterned photoresist mask.

9. The method of claim 1, wherein said fluorocarbon is at least one member selected from the group consisting of fluorinated carbons, fluorohydrocarbons, chlorofluorocarbons and chlorofluorohydrocarbons.

10. The method of claim 9, wherein said fluorocarbon is at least one member selected from the group consisting of C_4F_8, C_4F_6, C_5F_8, CF_4, C_2F_6, C_3F_8, CHF_3, and CH_2F_2.

11. The method of claim 10, wherein said fluorocarbon is at least one member selected from the group consisting of CF_4, CHF_3, and CH_2F_2.

12. The method of claim 1, wherein said method is performed without forming an etch stop.

13. The method of claim 12, wherein said method does not remove side wall spacers which are formed along the sides of a gate stack and which align said contact opening to said substrate.

14. The method of claim 1, wherein said method does not remove side wall spacers which are formed along the sides of a gate stack and which align said contact opening to said substrate.

15. The method of claim 9, wherein said fluorcarbon(s) and said ammonia are flowed into a reaction chamber containing said semiconductor device such that the flow rate ratio of said at least one fluorocarbon to said ammonia is not less than about 3:1.

16. The method of claim 15, wherein the flow rate ratio of said at least one fluorocarbon to said ammonia is within the range of about 3:1 to about 20:1.

17. The method of claim 16, wherein said flow rate ratio is within the range of about 4:1 to about 10:1.

18. The method of claim 11, wherein said fluorocarbon is at least two members selected from the group of CF_4, CHF3, and CH_2F_2.

19. The method of claim 18, wherein said fluorocarbons comprise CF_4, CHF3, and CH_2F_2.

20. The method of claim 11, wherein said fluorocarbon is CF_4 which is flowed into a reaction chamber at a flow rate of about 15 to about 20 sccm.

21. The method of claim 18, wherein said fluorocarbon is flowed into a reaction chamber at a flow rate of about 18 sccm.

22. The method of claim 11, wherein said fluorocarbon is CHF_3 which is flowed into a reaction chamber at a flow rate of about 35 to about 45 sccm.

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23. The method of claim 22, wherein said fluorocarbon is flowed into a reaction chamber at a flow rate of about 40 sccm.

24. The method of claim 11, wherein said fluorocarbon is CH_2F_2 which is flowed into a reaction chamber at a flow rate of about 10 to about 15 sccm.

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25. The method of claim 24, wherein said fluorocarbon is introduced at a flow rate of about 13 sccm.

26. A composition suitable for use in etching an insulative layer formed over a substrate in a semiconductor device, said composition comprising a gaseous mixture of at least one fluorocarbon and ammonia.

27. The composition of claim 26, wherein said fluorocarbon is at least one member selected from the group consisting of carbon tetrafluoride, fluorohydrocarbons, chlorofluorocarbons and chlorofluorohydrocarbons.

28. The composition of claim 27, wherein said fluorocarbon is at least one member selected from the group consisting of C_4F_8, C_4F_6, C_5F_8, CF_4, C_2F_6, C_3F_8, CHF_3, and CH_2F_2.

29. The composition of claim 26, wherein said fluorocarbon is at least one member selected from the group consisting of CF_4, CHF_3, and CH_2F_2.

30. The composition of claim 29, wherein said fluorocarbon is at least two members selected from the group consisting of CF_4, CHF_3, and CH_2F_2.

31. The composition of claim 30, wherein said fluorocarbon is a combination of CF_4, CHF_3, and CH_2F_2.

32. The composition of claim 24, wherein said composition does not remove side wall spacers of a gate stack which is also formed over said substrate.

33. The composition of claim 26, wherein said composition is flowed into a reaction chamber containing said semiconductor device such that the flow rate ratio of said fluorocarbon to said ammonia is not less than about 3:1.

34. The composition of claim 33, wherein said flow rate ratio is within the range of about 3:1 to about 20:1.

35. The composition of claim 36, wherein said flow rate ratio is within the range of about 4:1 to about 10:1.

36. A process for forming an opening in an insulative layer formed over a substrate in a semiconductor device, comprising:

forming a patterned photoresist mask layer over said insulative layer;

etching an opening in said insulative layer through an aperture in said patterned resist layer, wherein said opening is etched through to said substrate using a combination of ammonia and at least one fluorocarbon.

37. The method of claim 36, wherein said etching is performed to produce a self-aligned contact opening in said insulative layer.

38. The process of claim 36, wherein said etching is performed in a reaction chamber.

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39. The process of claim 38, wherein said at least one fluorocarbon and said ammonia are flowed into said reaction chamber such the flow rate ratio of said fluorocarbon to said ammonia is not less than about 2:1.

40. The process of claim 39, wherein said flow rate ratio is within the range of about 2:1 to about 40:1.

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41. The process of claim 40, wherein said flow rate ratio is within the range of about 3:1 to about 10:1.

42. The process of claim 36, wherein said etching is performed without forming an etch stop.

43. The process of claim 42, wherein said contact opening is formed between side wall spacers on a pair of adjacent gate stacks formed over said substrate.

44. The process of claim 43, wherein said etching is performed at a temperature within the range of about -50 to about 80 degrees Celsius.

45. The process of claim 44, wherein said etching is performed at a temperature within the range of about 0 to about 80 degrees Celsius.

46. The process of claim 45, wherein said method further comprises removing said photoresist mask layer after said etching.

47. A method of preventing etch stop during a self-aligned contact (SAC) etching of a semiconductor device which comprises adding ammonia to at least one fluorocarbon used for said etching.

48. The method of claim 47, wherein said ammonia is flowed to a reaction chamber containing said device at a flow rate within the range of about 2 sccm to about 6 sccm.

49. The method of claim 48, wherein said ammonia is flowed to said reaction chamber at a flow rate within the range of about 2 sccm to about 5 sccm.

50. The method of claim 49, wherein said ammonia is flowed to said reaction chamber at a flow rate not exceeding about 4 sccm.

51. The method of claim 50, wherein said at least one fluorocarbon is flowed into said reaction chamber with said ammonia.

52. The method of claim 51, wherein said fluorocarbon is flowed into said reaction chamber so as to have a flow rate which is not less than about 15 times the flow rate of said ammonia.

53. The method of claim 52, wherein the flow rate ratio of said fluorocarbon to said ammonia is within the range of about 3:1 to about 40:1.

54. The method of claim 53, wherein said flow rate ratio is within the range of about 4:1 to about 20:1.

55. The method of claim 52, wherein the flow rate ratio of said fluorocarbon to said ammonia is not greater than about 20:1.

56. The method of claim 47, wherein said ammonia is added substantially simultaneously with said fluorocarbon.

57. The method of claim 47, wherein said ammonia is added to a mixture comprising at least two fluorocarbons.

58. The method of claim 50, wherein said ammonia is added to a mixture comprising at least three fluorocarbons.

59. A method of preserving a side wall spacer surrounding a gate stack during a self-aligned contact etch, wherein said gate stack is formed over a substrate in a semiconductor device, which comprises contacting said spacer with a combination of at least one fluorocarbon and ammonia so as to form a protective layer over said spacer.

60. The method of claim 59, wherein said protective layer is formed to a thickness which is about 5 to 200 Angstroms in thickness.

61. The method of claim 60, wherein said at least one fluorocarbon and said ammonia are flowed together over said side wall spacer such that the flow rate ratio of said fluorocarbon to said ammonia is not less than about 3:1.

62. The method of claim 61, wherein said flow rate ratio is within the range of about 3:1 to about 20:1.

63. The method of claim 62, wherein said self-aligned contact etch provides an opening to said substrate through an insulative layer formed over said substrate.

64. A method of forming a conductive plug inside a contact opening in an insulative layer between adjacent gate stacks formed over a substrate in a semiconductor device, comprising:

contacting said insulative layer with a plasma etchant mixture containing ammonia and at least one fluorocarbon at a temperature within the range of about -50 to about 80 degrees Celsius so as to form a self-aligned contact opening in said insulative layer between said gate stacks without an etch stop, wherein said contacting further forms a protective layer over opposed side wall spacers which have been formed over said gate stacks;

depositing a conductive plug inside said opening such that said conductive plug is separated from said side wall spacers by said protective layer.

65. The method of claim 64, wherein said contacting is performed by flowing said ammonia over said device in a reaction chamber at a flow rate within the range of about 2 sccm to about 6 sccm.

66. The method of claim 64, wherein said fluorocarbon is at least one member selected from the group consisting of C_4F_8, C_4F_6, C_5F_8, CF_4, CHF_3, and

CH_2F_2 and is flowed over said device at a flow rate within the range of about 10 sccm to about 45 sccm.

67. The method of claim 66, wherein said mixture comprises at least two fluorocarbons and said flow rate ratio of each said fluorocarbon to said ammonia is within the range of about 3:1 to about 20:1.

68. The method of claim 67, wherein said mixture comprises three fluorocarbons and said flow rate ratio is within the range of about 4:1 to about 10:1.

69. The method of claim 64, wherein said protective layer is a nitrogen containing layer.

70. The method of claim 64, wherein said temperature is a pedestal temperature and said range is from about 0 to about 50 degrees Celsius.